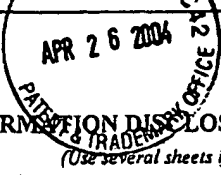


FORM PTO-1449 (REV. 7-80)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 310098.406	APPLICATION NO. 09/563,222
INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)			APPLICANTS Andrew Hiatt and Mich B. Hein	
			FILING DATE May 2, 2000	GROUP ART UNIT 1643 39

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
Tdw	AA	4,762,785	8/9/88	Comai	435	172.3	
	AB	4,771,002	9/13/88	Gelvin	435	172.3	
	AC	4,816,397	3/28/89	Boss et al.	435	68	
	AD	4,816,567	3/28/89	Cabilly et al.	530	387	
	AE	4,837,167	6/6/89	Schoemaker et al.	436	513	
	AF	4,956,282	9/11/90	Goodman et al.	435	69.51	
	AG	5,169,933	12/8/92	Anderson et al.	530	391.3	
	AH	5,202,422	4/13/93	Hiatt et al	530	387.3	
	AI	5,240,833	8/31/93	Nudelman et al.	435	70.21	
J	AJ	5,284,931	2/8/94	Springer et al.	424	85.8	

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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
Tdw	AK	EP 0732404A1	9/18/96	EPO				
	AL	JP 58134032	8/10/83	Japan				X
Tdw	AM	WO 87/00865	2/12/87	WIPO				
	AN	WO 88/04936	7/14/88	WIPO				
J	AO	WO 94/04678	3/3/94	WIPO				

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

Tdw	AP	Aizpurua and Russell-Jones, "Oral Vaccination: Identification of Classes of Proteins that Provoke an Immune Response upon Oral Feeding" <i>J. Exp. Med.</i> , 167:440-451, 1988.
J	AQ	Brandtzaeg and Baklien, "Immunohistochemical Studies of the Immunoglobulin-Producing Cell Systems of the Human Intestinal Mucosa," <i>Acta histochemica</i> , S. 21:105-119, 1980.
J	AR	Brandtzaeg and Prydz, "Direct Evidence for an Integrated Function of J Chain and Secretory Component in Epithelial Transport of Immunoglobulins," <i>Nature</i> 311: 71-73, 1984.

EXAMINER: T. W. [Signature] DATE CONSIDERED: 6/24/05

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Andrew Hiatt and Mich B. Hein

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Taw	BA	5,484,707	1/16/96	Goldblum et al.	435	7.91	
	BB	5,512,443	4/30/96	Schlom et al.	435	7.23	
	BC	5,639,947	6/17/97	Hiatt et al.	800	205	
	BD	5,731,168	3/24/98	Carter et al.	435	69.1	
	BE	5,840,526	11/24/98	Casterman et al.	435	69.1	
	BF	5,959,177	9/28/99	Hein et al	800	288	
	BG	6,045,774	4/4/00	Hiatt et al	424	9.1	

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
Taw	BH	WO 95/15393	6/8/95	WIPO				X
	BI	WO 98/30591	7/16/98	WIPO				
	BJ	WO 98/30592	7/16/98	WIPO				
	BK	WO 99/28502	6/10/99	WIPO				

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

Taw	BL	Brown and Koshland, "Evidence for a Long-Range Conformational Change Induced by Antigen Binding to IgM Antibody," <i>Proc. Natl. Acad. Sci. USA</i> 74(12): 5682-5686, 1977.
	BM	Burns et al., "Protective Effect of Rotavirus VP6-Specific IgA Monoclonal Antibodies That Lack Neutralizing Activity," <i>Science</i> 272:104-107, 1996.
	BN	Carayannopoulos et al., "Recombinant Human IgA Expressed in Insect Cells", <i>Proc. Natl. Acad. Sci. USA</i> , 91:8348-8352 (1994).
	BO	Carayannopoulos et al., "Localization of the Binding Site for the Nonocyte Immunoglobulin (Ig) A-Fe Receptor (CD89) to the Domain Boundary Between Ca2 and Ca3 in Human IgA1," <i>J. Exp. Med.</i> 183: 1579-1586, 1986.
	BP	Chrispeels, "Sorting of Proteins in the Secretory System" <i>Ann. Rev. Plant. Physiol. Plant Mol. Biol.</i> 42: 21-53 (1991).

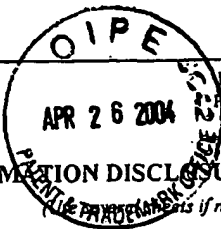
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Andrew Hiatt and Mich B. Hein

FILING DATE

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					YES NO

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

TAU	CA	Creighton, Thomas E., <i>Proteins Structures and Molecular Principles</i> , W.H. Freeman and Company, New York, pp. 2, 86-87, 1984.
	CB	Cocking and Davey, "Gene Transfer in Cereals," <i>Science</i> 236: 1259-1262, 1987.
	CC	Düring, "Wound-Inducible Expression and Secretion of T4 Lysomzyme and Monoclonal Antibodies in Nicotiana Tabacum." Dissertation, University of Koln, FRG. pp. 13-16, 65-78, 87-89, 103-105, 108-110, 112-118, 120-126, and 135-158, (Jul. 9) 1988.
	CD	Düring and Hippe, "Synthesis, Assembly and Targeting of Foreign Chimeric Proteins in Transgenic Nicotiana Tabacum Cells," <i>Biol. Chem. Hoppe Seyler</i> , 370(9): 888, 1989.
	CE	Düring et al., "Synthesis and Self-Assembly of a Functional Monoclonal Antibody in Transgenic Nicotiana tabacum," <i>Plant Molecular Biology</i> , 15:281-293, 1990.
	CF	Edelman et al., "The Covalent Structure of an Entire γ G Immunoglobulin Molecule", <i>Proc. Nat. Acad. Sci. USA</i> 63(1):78-85, 1969.
	CG	Eichholtz et al., "Expression of Mouse Dihydrofolate Reductase Gene Confers Methotrexate Resistance in Transgenic Petunia Plants" <i>Somatic Cell and Mol. Genet.</i> 13(1): 67-76 1987.
	CH	Emancipator and Lamm, "IgA Nephropathy: Overproduction of Decreased Clearance or Immune Complexes?" <i>Laboratory Investigation</i> 61(4): 365-367, 1989.
	CI	Ferkol et al., "Gene Transfer into Respiratory Epithelial Cells by Targeting the Polymeric Immunoglobulin Receptor," <i>J. Clin. Invest.</i> 92: 2394-2400, 1993.
	CJ	Frutiger et al., "Disulfide Bond Assignment in Human J Chain and Its Covalent Pairing with Immunoglobulin M," <i>Biochemistry</i> 31: 12643-12647, 1992.
	CK	Graves and Goldman, "The Transformation of Zea mays seedlings with Agrobacterium Tumefaciens," <i>Plant Molecular Biology</i> 7: 43-50, 1986.
	CL	Hammond, Elizabeth, "Ultrastructural Characteristics of Surface IgM Reactive Malignant Lymphoid Cells," <i>Experimental Cell Research</i> 59:359-370, 1970.
✓	CM	Heijne, "Signal Sequences the Limits of Variation," <i>J. Mol. Biol.</i> 184: 99-105, 1985.

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OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)							
tau	DA	Hein et al., "Evaluation of Immunoglobulins from Plant Cells," <i>Biotechnol. Prog.</i> 7: 455-461, 1991.					
	DB	Hendrickson et al., "Altered Hepatic Transport of Immunoglobulin A in Mice Lacking the J Chain," <i>J. Exp. Med.</i> 182: 1905-1911, 1995.					
	DC	Henneberg et al., "Antibrain Antibodies in Alcoholic Patients," <i>Alcohol & Alcoholism</i> 28(2): 181-187, 1993.					
	DD	Hiatt et al. "Production of Antibodies in Transgenic Plants," <i>Nature</i> 343:76-78, 1989.					
	DE	Horsch, et al., "A Simple and General Method for Transferring Genes into Plants," <i>Science</i> 227: 1229-1231, 1985.					
	DF	Hunt, et al., "Plant Cells Do Not Properly Recognize Animal Gene Polyadenylation Signals," <i>Plant Molec. Biol.</i> 8: 23-25, 1987.					
	DG	Janknecht and Nordheim, "Affinity Purification of Histidine-Tagged Proteins Transiently Produced in HeLa Cells," <i>Gene</i> 121: 321-324, 1992.					
	DH	Kaetzel et al., "Epithelial Transcytosis of Monomeric IgA and IgG Cross-linked Through Antigen to Polymeric IgA: A Role for Monomeric Antibodies in the Mucosal Immune System," <i>Journal of Immunology</i> 152: 72-76, 1994.					
	DI	Kaetzel et al., "The Polymeric Immunoglobulin Receptor (Secretory Component) Mediates Transport of Immune Complexes Across Epithelial Cells: A Local Defense Function for IgA," <i>Proc. Natl. Acad. Sci.</i> 88:8796-8800, 1991.					
	DJ	Kimball, John W., Introduction to Immunology, Macmillan, New York, "The Three Dimensional Structure of Immunoglobulins," pp.264-265					
	DK	Kulseth and Rogne, "Cloning and Characterization of the Bovine Immunoglobulin J Chain cDNA and Its Promoter Region," <i>DNA and Cell Biology</i> 13(1):37-42, 1994.					
✓	DL	LeFebvre et al. "Mammalian Metallothionein Functions in Plants," <i>Bio/Technology</i> 5(10): 1053-1056, 1987.					
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OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

EA	Lemaitre-Coelho et al., "In Vivo Experiments Involving Secretory Component in the Rat Hepatic Transfer of Polymeric IgA from Blood into Bile," <i>Immunology</i> 43:261-270, 1981.
EB	Lütcke et al., "Selection of AUG Initiation Codons Differs in Plants and Animals," <i>EMBO J</i> 6: 43-48, 1987.
EC	Ma et al., "Assembly of monoclonal antibodies with IgGL and IgA heavy chain domains in transgenic tobacco plants," <i>Eur. J. Immunol.</i> 24:131-138, 1994.
ED	Mach, Jean-Pierre, "In vitro combination of human and bovine free secretory component with IgA of various species", <i>Nature</i> 228:1278-1282, 1970.
EE	Mannik and Arend, "Fate of Preformed Immune Complexes in Rabbits and Rhesus Monkeys," <i>Journal of Experimental Medicine</i> 134: 19s-31s, 1971
EF	Max and Korsmeyer, "Human J Chain Gene. Structure and Expression in B Lymphoid Cells," <i>Journal of Experimental Medicine</i> 161: 832-849, 1985.
EG	Mazanec et al., "Intracellular Neutralization of Influenza Virus by Immunoglobulin A Anti-Hemagglutinin Monoclonal Antibodies," <i>Journal of Virology</i> 69(2): 1339-1343, 1995.
EH	Mestecky et al., "The Role of the Liver in Catabolism of Mouse and Human IgA," <i>Immunological Investigations</i> 18(1-4): 313-324, 1989.
EI	Morton et al., "Purification and Characterization of Chimeric Human IgA1 and IgA2 Expressed in COS and Chinese Hamster Ovary Cells," <i>Journal of Immunology</i> 151(9): 4743-4752, 1993.
EJ	Nagura et al., "Translocation of Dimeric IgA Through Neoplastic Colon Cells In Vitro," <i>J. of Immunology</i> 123(5): 2359-2368, 1979.
EK	Natvig et al., "Mechanism for Enhanced External Transfer of Dimeric IgA over Pentameric IgM," <i>J. of Immunology</i> 159:4330-4340, 1997.
EL	Paul, William E. (ed.), <i>Fundamental Immunology</i> , Raven Press, New York, 1985, pp. 132-133.

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tdw	FA	Rifai et al., "Clearance Kinetics and Fate of Macromolecular IgA in Patients with IgA Nephropathy," <i>Laboratory Investigation</i> 61(4): 381-388, 1989.
	FB	Rifai and Mannik, "Clearance Kinetics and Fate of Mouse IgA Immune Complexes Prepared with Monomeric or Dimeric IgA," <i>J. of Immunology</i> 130(4): 1826-1832, 1983.
	FC	Sheldrake et al., "Selective Transport of Serum-Derived IgA into Mucosal Secretions," <i>J. of Immunology</i> 132(1): 363-368, 1984.
	FD	Tamer et al., "Comparative Studies Of Transcytosis and Assembly of Secretory IgA in Madin-Darby Canine Kidney Cells Expressing Human Polymeric Ig Receptor," <i>J. of Immunology</i> 133: 708-714, 1995.
	FE	Terskikh et al., "Dimeric Recombinant IgA Directed Against Carcino-Embryonic Antigen, a Novel Tool For Carcinoma Localization," <i>Molecular Immunology</i> 31(17): 1313-1319, 1994.
	FF	Thiele et al., "Mammalian Metallothionein Is Functional in Yeast," <i>Science</i> 231: 854-856, 1986.
	FG	Thorens and Vassalli, "Chloroquine and Ammonium Chloride Prevent Terminal Glycosylation of Immunoglobulins in Plasma Cells Without Affecting Secretion," <i>Nature</i> 321: 618-630, 1986.
	FH	Vaerman et al., "Lack of SC/plgR-mediated epithelial Transport of a Human Polymeric IgA Devoid of J Chain: in Vitro and in Vivo Studies," <i>Immunology</i> 95: 90-96, 1998.
	FI	Valnes and Brandtzaeg, "Comparison of Paired Immunofluorescence and Paired Immunoenzyme Straining Methods Based on Primary Antisera from the Same Species," <i>J. of Histochemistry and Cytochemistry</i> 30(6): 517-523, 1982.
	FJ	Vandekerckhove et al., "Enkephalins Produced in Transgenic Plants using Modified 2S Seed Storage Proteins," <i>Bio/technology</i> 7(9): 920-932, 1989.
↓	FK	Ward et al., "Binding Activities of a Repertoire of Single Immunoglobulin Variable Domains Secreted from Escherichia Coli," <i>Nature</i> 341: 544-546, 1989.

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	GI					

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						YES	NO
	GJ						
	GK						
	GL						
	GM						

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

Tdw	GN	Weissleder et al., "Quantitation of Slow Drug Release from an Implantable and Degradable Gentamicin Conjugate by In Vivo Magnetic Resonance Imaging," <i>Antimicrobial Agents and Chemotherapy</i> 39(4): 839-845, 1995.
Tdw	GO	Youngman et al., "Inhibition of IFN- γ Activity in Supernatants from Stimulated Human Intestinal Mononuclear Cells Prevents Up-Regulation of the Polymeric Ig Receptor in an Intestinal Epithelial Cell Line," <i>J. of Immunology</i> 153: 675-681, 1994.
	GP	Abstract of JP 58134032, <u>esp@cenet</u> database, August 10, 1983.

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